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## A stream of meaning flowing through life

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As we have often stated, the issues and editorials prefacing *Visions for Sustainability* have endeavoured to contribute to humanity's dialogue with nature (Prigogine & Stengers, 1984). Dialogue (*dia*: "through" – *logos*: "word" or "signifier") is described by Bohm (1996) as "a stream of meaning flowing among and through and between us" (p. 6). The stream of meaning that creates the flow of humanity's dialogue has always been shaped by the evolution of human language and the way in which "we human beings exist and operate as human beings as we operate in language: languaging is our manner of living as human beings" (Maturana, 2002, p.27). Moreover, the sustainability of life itself depends on language as a means of creating the flow, the exchange and the processing of information that enable the biological processes that are vital for all living organisms.

### Life as biolanguaging

Indeed, languaging is not only *our* way of living as human beings. Nor is the "stream of meaning [...] between *us*" a flow existing only between *us* as human beings, but rather between *us* as all living organisms and the biosphere *we* inhabit together. All life exists and operates as *Biolanguaging*, seen as a complex flow of information between interconnected living organisms, a *biodialoguing* involving a multiplicity of signifiers that goes way beyond the words of human language. An increasing body of research – more commonly referred to in terms of *biocommunication* (Gordon & Seckback, 2017) – has reached the conclusion that operating through biolanguaging involves processes of predicting, interpreting, decision-making, coordinating and organizing based on interaction and information processing. This process encompasses dialoguing between abiotic and biotic elements, animals, plants, fungi, eukaryotes, akaryotes and viruses, and can involve interorganismic (interspecific and intraspecific) languaging

or intraorganismic (intercellular or intracellular) languaging.

Human languaging as our manner of living is thus an infinitesimally small part of biolanguaging as all living organisms' manner of living. Humanity's dialogue with nature is dwarfed by the immensity of life's dialogue with nature and across the vast spectrum of life there are innumerable ways of languaging that are inevitably very different from those of human languages. In terms of *why*, *how* and *what* languaging takes place, such a multiplicity is potentially infinite within the *n*-dimensional linguistic hyperspace of life.

Moreover, even within human languages, there are vast numbers of language families and individual varieties that are largely incomprehensible to users of other languages. Human language is a biocultural evolutionary system and in our multilingual world every single language is a particular example of the immense diversity that such a system can generate. Within the vast spectrum of human multilingual diversity, each language has a special way of creating the processes of sense-making and the intricate texture of meanings by which its users live (Dodman, 2014).

### **Language comes from the land**

At the same time, operating in language is a highly complex and often contradictory process of context-dependent meaning building, since language is "both the constricting horizon and the energising atmosphere within and by which all human activity must be understood (Said 1975, p.284). Language both conditions our courses of action and our way of understanding that action. While, as our energising atmosphere, language has the meaning potential to enable infinite processes of signification, as our constricting horizon, language inevitably creates a setting that limits these processes. Indeed, "where we are is in a sentence" (Spicer, 1975, p. 175), both in terms of the particular lexicogrammatical features of a given language that furnish us with our cognitive tools and of how this confines all our vision and action within certain frames of reference.

Moreover, increasing language mortality, together with the consequent loss of diversity and spread of uniformity, risks creating tunnel vision and inflexibility, an incapacity to adapt and a reduced potential for life. The inability on the part of any living organism to understand and use the information contained within the composite flow of biolanguaging is an evolutionary disability. All our attempts both to proceed with and understand the flow of meaning that constitutes our dialogue – and to put it in the context of the dialogue of all other living organisms – risk being hampered by the limits of the very human languaging on which we depend. Important conditions for continuing our dialogue must be recognizing those limits and developing awareness of what they imply, endeavouring to realize more fully the energizing horizon of human meaning potential and ensuring that we take into account an overall biolanguaging perspective. An important point of departure for this enterprise would profitably be that which is often expressed by users of many indigenous languages from various continents, "language comes from the land [...] Words are given to us by the land [...] the land needs words, the land speaks for us, and we use language for this. Words make things happen — make us alive" (Turner, 2010, p. 16). Rediscovering this bond with the *oikos* as the place where life can "take place" is essential in order put human languaging within the stream of meaning of biolanguaging.

### **The emergence of new trajectories**

According to the WHO (2021), 2020 was "a year that changed the world". Going into detailed discussion of what is meant by such a statement is quite beyond the scope of this editorial, but we could say that the Covid-19 pandemic will come to be seen as a watershed, the characteristics and extent of which still remains to be defined. During the emergency (*e-mergere*: "come to the surface", "let what was hidden be seen"), all the fragility of humanity's current dominant structures and trajectories has indeed re-emerged, not merely as direct social, economic and political consequences of the global spread of a virus, but, more importantly, as an outcome of our inability to understand information. If an important part of the function of information in living systems (Rohr, 2014) is interpreting it within its environment, using it to make predictions and adapt to changing circumstances, then we have clearly been unable to do so.

The WHO document concentrates on (the lack of) preparedness and response strategies in the

face of a pandemic, and at the same time there have been notable achievements on the part of healthcare systems and the scientific community in terms of diagnostics and treatment, as well as the development of vaccines. The point, however, is to understand causes and not just to react to consequences, mitigate risks that ensue from the environmental perturbations for which we are often largely responsible, take action to enable equitable and effective participation in preventative action as well as access to treatments and vaccines.

Any consideration of what changes and how it changes must necessarily start from asking to what extent the emergency has produced conditions that are favourable for re-thinking (thereby re-languaging) in order to extend the breadth and depth of our dialogue with nature, provided that discourse takes account of each of these conditions. The concept of resilience has come to be used ever more frequently. In this respect, it is essential that we bear in mind that resilience “is not only about being persistent or robust to disturbance. It is also about the opportunities that disturbance opens up in terms of recombination of evolved structures and processes, renewal of the system and emergence of new trajectories” (Folke, 2006).

### **Exploring the meaning potential of “ecological”**

There has recently been widespread talk of the need for an *ecological transition*. The way in which this term is often used seems, however, to ignore the fact that ecology is the study of the interactions between living organisms and their physical environment. Since these interactions are constant and unceasing, this means that from the very birth of life on Earth our biosphere has always been characterized by transition (*transire* = to go across), both a process of changing or a period of changing from one state or condition to another. Life is ongoing ecological transition and biolanguaging can be seen both as existing and operating as living organisms and as exercising the specific ecological roles this entails. Moreover, what we have come to call the Anthropocene has already produced potentially one of the most devastating period of ecological transition Earth has ever known. Our constant striving for what is apparent progress in every sphere of our lives has actually produced a massive reduction in our ways of being and exploring the meaning potential of language.

The point therefore is *what kind* of ecological transition can we play a part in, paradoxically undoing that for which we have been responsible during a brief, but increasingly aberrant period of our existence in which we have forgotten that the exercise of an ecological role must be within a defined niche constituted by specific conditions, resources and interactions, and increasingly treated the entire biosphere as an unlimited resourcesphere to manipulate and exploit, unaware or heedless of the range of potential ecological transitions we have impeded by our emphasis on a “growth-based” model of living. In defining our role, we must always remember to recognize our responsibilities and act accordingly, assuming a way of being founded on humility and thereby shedding the terrible hubris of our belief that we can engineer solutions based exclusively on new human technologies and in particular the spread of artificial intelligence. Indeed, as Crawford (2021) puts it, artificial intelligence is neither artificial nor intelligent and is often based on environmental degradation. It is produced from natural resources, involving, for example, the labour exploitation of lithium mining, and requires people to perform the data extraction tasks that render the systems apparently autonomous.

Our dialogue with nature depends on how we construe our relationship to nature. Artificial intelligence is not the basis of a different relationship, nor is it the answer to how we can be a part of (not the sole player in) a new ecological transition, since it is essentially built perpetuating the same kinds of human and resource exploitation. We must understand how nature has all that is necessary to promote a process of dynamic equilibrium of which we are a more or less significant part and develop ways of re-entering into harmony with that process. Since the term ecological is descriptive and not prescriptive, we need to question how we conceptualize ecological processes in terms of predicting, interpreting, decision-making, coordinating and organizing based on interaction and information processing, and understand how our human languaging can guide our action on the basis of this awareness.

## Humility and marvel

An important point of departure for such an ecological transition could perhaps be that of developing greater concern for concepts such as *ecoliteracy* and *ecojustice*. Both are relatively recent developments within human languaging and can in no way be adequately treated here. If, however, we take a basic principle of ecoliteracy to be awareness of our interconnectedness and kinship with all life (Young Brown, 2021), then all our languaging should be based on the humility that such a recognition engenders and consequent marvel (*mirari* = “look intensely, with attention, with surprise, with wonder, with admiration”). From this point of view, what is normally the object of our perception and subsequent action becomes a subject in the interaction between the observer and the observed and renders the dialogue a two-way flow of information. The observed becomes the source and the initiator of perception and acts upon the observer.

This way of construing ourselves as part of nature could feed directly into the concept of ecojustice, whereby we recuperate the idea of justice as a harmonious relationship that is common to many and various philosophical traditions. Justice is a human concept we have tended to apply exclusively to ourselves but which we would be well advised to extend to nature, seen as what gives rise to our biosphere, an inhabitable environment in which life can emerge and reside. Nature itself is not concerned with justice, but rather with dynamic equilibrium and adaptability, but, since we are able to conceptualize such an idea and consider it a pillar of democracy, we should apply it to the entire biosphere, simply because this would be *just*, or harmonious. Otherwise, our dialogue with nature will always be hypocritical and we will remain unable to understand that the value of non-human life cannot be judged on the basis of its usefulness for human purposes.

## Perspectives on human beings and nature

Each of the papers published in this issue consider the relationship between human beings and nature from different perspectives.

Kopnina et al. examine various aspects of ecodemocracy and ask how capable democratic societies are of addressing environmental challenges. They are concerned with what ecodemocracy could look like in practice, and in particular with what is needed to secure democratic legitimacy for policy measures to benefit nonhuman species. In this respect, they investigate a possible approach in the form of a mandate for proxy eco-representation similar to civil rights through continuous affirmative action, while considering other approaches and what are the limitations and possibilities of each approach for nature representation.

Di Carmine and Berto offer an environmental psychology perspective on the benefits of contact with nature with particular reference to *atypical* children with Attention deficit hyperactivity disorder (ADHD). They examine how environments can be capable of restoring depleted resources such as attention and consider the scientific evidence that exposure to nature offers attentional recovery as explained by Attention Restoration Theory.

Colombo et al. present a study of wildflowers in Italian urban settings and people’s preferences as regards the rich diversity of wildflowers. They look at how preference for wildflowers may be affected by the way the issue is presented, and also whether an individual’s connection to nature affects preference for wildflowers.

Asim et al. look at how working and living environments may be restorative and mitigate psychological problems at the source. Their main focus in this paper is on the strategies and developments of Biophilic design with respect to therapy and restoration, in order to achieve sustainability in terms of quality of life within the immediate built environment.

Pauku argues that sustainability is most often defined through three dimensions: environmental, economic, and social. Looking at Finnish legislation, he considers how environmental sustainability is often pursued directly, whereas the other two are pursued indirectly or not at all, depending on the way in which sustainability itself is defined. He concludes that it is better to pursue separate policy goals that promote individual aspects of sustainability within specific laws.

Dodman’s review of *The Disappearance of Butterflies*, by Josef Reichholf, shows how the author offers a series of fascinating insights into the biology, the physics and the chemistry of

Lepidoptera, including their remarkable adaptive capacities in the face of eco-systemic transformations. At the same time, he also considers how Reichholf poses a range of provoking questions concerning the multiple, interwoven facets of living organism and human trajectories and the question of assuming responsibility for taking action when those trajectories become either threatening or threatened.

### Next year's words

Clearly, if our dialogue is with nature, then a key aspect of any process of re-languaging concerns the way or ways in which we define nature and ourselves as part of it, how we understand it and our role within it, how we interact with it and all the abiotic and biotic elements that compose it. As Ducarme & Cuvet (2020) put it:

“nature” is not such an easy word, and it actually fits the definition of an abstract concept, hence a mental construction rather than a concrete notion, which is situated both historically and geographically, and needs definition in context [...]. [Moreover], the word “nature” does not always have a translation in other languages or can embody different meanings within a language (pp. 1-2).

This editorial has been an attempt to examine some features of the current historical context and contribute to a new mental construction based on re-languaging our dialogue with nature. If languaging is our way of being and our current way of being is largely unsustainable, then we must at least consider the extent to which our current way of languaging is therefore unsustainable. Perhaps we will really be able to talk about a year that changed the world if a different and more sustainable voice emerges for our dialogue. As Eliot (1942) puts it:

For last year's words belong to last year's language

And next year's words await another voice.

And to make an end is to make a beginning.

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